

## 730 - EPOXY RESIN CRACK REPAIR

### SECTION 730

#### EPOXY RESIN CRACK REPAIR

##### 730.1 DESCRIPTION

Repair cracks in the concrete by epoxy injection at the locations shown in the Contract Documents, or as designated by the Engineer.

##### BID ITEM

Epoxy Resin Crack Repair

##### UNITS

Linear Foot

##### 730.2 MATERIALS

Provide a Type IV, Grade 1, Class B or C epoxy material for injection purposes that complies with **SECTION 1705** and is compatible with the concrete temperature at the time of repair.

For sealing surface cracks, provide either:

- Silicone Rubber Surface Crack Sealant (clear or gray) that complies with **SECTION 1724**.
- Type IV, Grade 3, epoxy material that complies with **SECTION 1705**.

##### 730.3 CONSTRUCTION REQUIREMENTS

**a. General.** A representative of the Bureau of Research must approve the Contractor's equipment before work starts on the project.

Arrange to have a representative of the Bureau of Research present when the work begins. The KDOT representative will remain on the project until both the Contractor and Inspectors have an understanding of the proper procedures for this work.

Provide a log and record the following data as injection proceeds:

- The date the injection ports are set;
- The date the injection is performed;
- The length of the crack injected;
- The amount of epoxy used;
- The temperature of the concrete in which the injection is performed; and
- The air temperatures when injection is performed.

The Project Engineer must approve the injection log and verify the correctness of the recorded data. Upon completion of the project, provide the Project Engineer with the recorded data. The Project Engineer will forward this information to the Bureau of Structures and Geotechnical Services.

Make a representative of the material manufacturer available at the request of the Engineer.

Injected epoxy resin must be allowed to set a minimum of 4 hours before allowing traffic on the structure.

The materials, construction procedures, and the completed project will be inspected and approved by the Engineer.

**b. Sealing Surface Cracks.** Seal all visible surface cracks in the concrete. Before sealing the surface cracks, clean the surface to which the sealant will be applied.

Do not apply the sealant to wet surfaces. Apply the sealant with a minimum thickness of 1/8 inch, and a width of 3/4 inch on both sides and ends of the crack.

If silicone rubber sealant is used, allow the sealant to cure a minimum of 24 hours. If an epoxy sealant is used, follow the epoxy manufacturer's recommendations for minimum cure time requirements based on substrate and ambient temperatures.

**c. Epoxy Resin Crack Injection.** Drilled ports or surface mount ports are acceptable. If drilled ports are used, vacuum drilling of the port holes is required. Place drilled injection ports at a depth recommended by the injection equipment manufacturer.

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Space the epoxy injection ports as recommended by the material supplier and/or the epoxy injection equipment manufacturer.

Allow adhesive used to attach injection ports to cure for 24 hours before injecting the epoxy resin.

Begin injecting at the lowest part of the concrete and work upward as the cracks are filled. This will be evidenced by the presence of epoxy in the next port above. On horizontal cracks proceed with injection from one end of the crack and work toward the other.

Check for leaks in the surface sealed cracks during the epoxy injection operations. If leaks are found, repair the sealant with hot glue and tongue depressors or other methods approved by the Engineer.

On cracks of 1/8 inch or wider, limit the back pressure to a maximum of 30 psi. On all other cracks, maintain the back pressure between 80 and 100 psi.

After the injection is complete clean all surfaces of sealer and epoxy materials.

### **730.4 MEASUREMENT AND PAYMENT**

The Engineer will measure epoxy resin crack repair by the linear foot.

Payment for "Epoxy Resin Crack Repair" at the contract unit price is full compensation for the specified work.